Work Orde <i>June-18-14 1:57:</i>	r ID 121235		*12	1235*						Page 1
Revision ID: Item Name:	O3463-1 Arm /18/14	*10* *10*	Accept	*N900 Cust Item Customer	ı ID:	110	n*	Setup St		S1* S2*
Approvals:	Process Plan: MCゴ	Date: 1406-18	Tooling: _		Date:					R1*
	QC:	Date:	SPC (Y/N):		Date:			St	_{ob} *//	R2*
Sequence ID/ Work Center ID	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	t Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr	•			,					
D3463	Rev B									. 1
100			0.00							and .
100 Bandsaw	BAND SAW Memo		0.00			u u	10			J.CL.
Jeaspa Bandsaw	Cut blank 2:	5.00 "long	M12 6 182 20178# 21 0.00							19106/2
105 Lathe Conv	Memo		0.00							J.C.L"

110

10* Small Fab

Ream tube at both ends aprox 2" deep at .750" Dia

Small Fab Small Fab

Conventional Lathe

1-Bend as per dwg D34632-Trim to lenght per dwg D34633- Deburr

0.00

0.00

10

DQA:			Date:			— — — — — — — — — — — — — — — — — — —								
						WORK ORDER NON-	-CC	ONFO	RMANCE / UP			[AEROSPACE
QA Closed:			Date:							V	Vork Order u	odate only		
Work Orde	ar.					DISPOSITION				AGAINST D	EPARTMENT	/PROCESS		
WOIR Old	•					Rework			Skid-tube	Crosstube	7	Water Jet	\neg	Engineering
Part N	lo.					Scrap		i	Machining	Small Fab	Pro	d. Eng. Coor.		Quality
	•		•		 .	Use-as-is		Thern	noforming	Finishing	Rec/Sto	re/Packaging		Other
NCR N	lo.					Suspected Unapproved		•	Large Fab	Composite		Supplier		
Doot	1		1		Docc	ription of work order update		Initial	Acti	on	Sign &			
Root Cause		Date	Step	Qty	Desci	or non-conformance	ı	ief Eng	Descri		Date	Verification	, I	QC Inspector
Design	\dashv	Date	Step	Qty		or non-comormance	Cit	iici Liig	Descri	ption	Jule	Vermodelo	-	<u> </u>
Doc/Data														
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Supplier														
Training									•					
Transport					,	,								
Unapproved				<u> </u>										
							FA	ULT CAT	regory					
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		Centre No	ot Concen	ntric	_	BOM/Route	_	Grain		<u> </u>	Over/Under	ł		Set-up
		Cracks				Broken/Damage/Defect		Hardwa		<u> </u>	Part Incorre			Temperature/Cure
,		Crimp/Kir	nk/Ripple,	/Wave	<u> </u>	Burrs	╙	4 .	ion Incomplete/Un	_	Part Lost/M	issing	_	Weld
		Cuffs				Contamination	⊢	4	tions Incomplete/U	nclear	Part Moved	\.		Wrong Stock Pulled
:		Crushing			<u> </u>	Countersink	_	4 "	gned/off center	-	Positioned V			Othor
	_	Heat Trea		T b	<u> </u>	Cut Too Short	\vdash	Mislabe		<u>L</u>	Power Loss/	ourge [Other
	_	Inspection		iube		Drawing	<u> </u>	Misread						
	\vdash	Marks/Ch			\vdash	Drill Holes	-	Off-set	Calibration					
	\vdash	Turning S			\vdash	Finish Fit/Function	\vdash	4				······································		<u></u>
		Wave/Tw	กระเก เนช	Je	- 1	rigrantion	1	Out of Sequence						

Quality Control

121235

Page 2

June-18-14 1:57:38 PM Accept *N900040100* **Item ID:** D3463-1 Setup Start **Revision ID:** Stop Arm' **Item Name:** *10* **Start Qty:** 10.00 **Start Date:** 6/18/14 **Cust Item ID:** Required Date: 6/18/14 Reg'd Oty: 10.00 *10* **Customer:** Reference: Run Start Tooling: Process Plan: Date: Date: **Approvals:** Stop Date: SPC (Y/N): QC: Date: Set Up/ Tool ID Tool# Plan Reject Sequence ID/ Operation Accept Reject Insp. Qty Qty Stamp **Work Center ID** Number **Description Run Hours** Code 120 QC5- Inspect part completeness to step on W/O 0.00 *120* 14.0829. QC 0.00 Memo Quality Control Ensure 90 deg angle is within tol. (+/-0.5deg) critical dim. 0.00 130 CONVENTIONAL MILLING MACHINE *120* Mill Conv 0.00 Memo Conventional Milling Machine 1- Drill as per dwg D3463(One side only) 2-Deburr as per dwg D3463 0.00 140 QC2- Inspect parts off machine FAI/FAIB 10 0 *110* QC 0.00 Memo

DQA:		Date:			WORK ORDER NON-CONFORMANCE / UPDATE						`DART	
246		Data			WORK ORDER NON-	·CC	ONFO	RMANCE / UPDATE	١٨/،	ork Order up	vdate only	AEROSPACE 1
QA Closed:		Date:				_			VV.	ork Order up	date only	
Work Order	·•				DISPOSITION			AGAINST	DE	PARTMENT	PROCESS	
Work Orac.	·				Rework			Skid-tube Crosstube]	Water Jet	Engineering
Part No	o.	Scrap Machining Small Fab Prod. Eng. Coor.				d. Eng. Coor.	Quality					
					Use-as-is		Thern	noforming Finishing		Rec/Stor	e/Packaging	Other
NCR No	o.				Suspected Unapproved			Large Fab Composite Supplier] [] [
							,	-				
Root				Desci	ription of work order update		nitial	Action		Sign &		
Cause	Date	Step	Qty		or non-conformance	Ch	ief Eng	Description	•	Date	Verification	QC Inspector
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Doc/Data												
Equip/Tooling												
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Operator												
Offset/Setup												
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						FAU	ULI CA	regory				
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-	Bending	at Canca	ntrio		BOM/Route	\vdash	Grain	Togram		Over/Under	}	Set-up
	Centre No	of Conce	nunc	-	Broken/Damage/Defect	├	Hardwa	uro .	-	Part Incorred		Temperature/Cure
	Cracks Crimp/Kir	ok/Pinnle	Mayo		Burrs		4	ion Incomplete/Unqualified	\vdash	Part Lost/Mi		Weld
·	Cuffs	IN INIPPLE	, wave	-	Contamination		4 .	tions Incomplete/Unclear	一	Part Moved		Wrong Stock Pulled
-	Crushing				Countersink	_	4	ned/off center		Positioned V	ــــــ Vrong	
}	Heat Trea	nt			Cut Too Short	\vdash	Mislabe		\vdash	Power Loss/		Other
			Tube		Drawing		Misread		_	.	- <u>_</u>	
-	Inspection Strip in Tube Drawing Marks/Chatter Drill Holes			Off-set								
<u> </u>	Turning S		ı		Finish	Out of Calibration						
	Wave/Tw	•			Fit/Function		4	Sequence				

					•							
Work Orde		21235		*12	1235*							Page 3
Item ID: Revision ID: Item Name:	D3463-1 Arm			Accept	*N900	<u>1040</u>	10	೧ *	Setup	Start Stop	1.71	S1* S2*
Start Date: Required Date: Reference:	6/18/14	Start Qty: 10.00 Req'd Qty: 10.00	*10* *10*		Cust Item 1 Customer:	ID:					~IV	.J/"
Approvals:	Process Pla	an:	Date:	Tooling:	D	ate:			Run	Start	i.//	R1*
			Date:	SPC (Y/N):	D	ate:				Stop	*N	R2*
Sequence ID/ Work Center II)	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accep Qty	t Rej Qty		Reject Number	Insp. Stamp
150		QC8- Inspect parts - secon	nd check	0.00				$\overline{}$				
150 QC Quality Control		Memo		0.00				(i)				<u>JJ49-1</u> 9
160 *160* Packaging Packaging		Identify as per dwg & Sto Memo	ck Location:	0.00				10				14-10-8 18

0.00

0.00

170

170

Quality Control

QC21- Final Inspection - Work Order Release

Memo

14/10/2 Hd ARL-10-06

DQA:			_ Date:			—							<u>'</u>	
			5.			WORK ORDER NON-	-C(ONFO	RMANCE / UF		Vork Ordor un	ndata anlız - [AEROSPA	CE
QA Closed:			Date:				_				Vork Order up	date only		
Work Orde	۵r.				1	DISPOSITION				AGAINST D	EPARTMENT	/PROCESS		
WOIN OIG	٠				_	Rework			Skid-tube	Crosstube		Water Jet	Engineering	٦
Part N	۱o.					Scrap			Machining	Small Fab	Pro	d. Eng. Coor.	Quality	_
					·	Use-as-is		Thern	noforming	Finishing	Rec/Sto	re/Packaging	Other	_
NCR I	١٥٠		***			Suspected Unapproved			Large Fab	Composite		Supplier		
Root					Desc	ription of work order update		Initial	Acti	on	Sign &			
Cause		Date	Step	Qty		or non-conformance	Ch	ief Eng	Descri	ption	Date	Verification	QC Inspecto	ır
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Equip/Tooling														
Handling/Pre														
Material							İ							
Operator														
Offset/Setup														
Process														
Supplier												·		
Training												·		
Transport													1	
Unapproved												<u>.</u>		
							FA	ULT CAT	TEGORY					
Landi	ng (Gear				General		,				-		
		Bending				Bend		4	rogram	Ĺ	Outside Dim	-	Pressure/Forced	4,
		Centre N	ot Concer	ntric		BOM/Route		Grain		ļ	Over/Under	<u>-</u>	Set-up	
		Cracks	·			Broken/Damage/Defect		Hardwa	re	_	Part Incorre	_	Temperature/Cu	·e
		Crimp/Ki	nk/Ripple	/Wave		Burrs	L	Inspecti	ion Incomplete/Un	qualified	Part Lost/Mi	ssing	Weld	
		Cuffs				Contamination	<u> </u>	4	ions Incomplete/U	nclear	Part Moved	L	Wrong Stock Pull	ed
		Crushing				Countersink		4	ned/off center	L	Positioned V		_	
		Heat Trea	at			Cut Too Short		Mislabe		L	Power Loss/	Surge	Other	
		Inspectio	n Strip in	Tube		Drawing	$ldsymbol{ld}}}}}}$	Misread	t					
		Marks/Cl	natter			Drill Holes		Off-set			·····			
		Turning S	Sequence			Finish		Out of 0	Calibration					
	Wave/Twist in Tube			oe		Fit/Function	Out of Sequence							

Picklist Print

June-18-14 1:57:40 PM

Work Order ID: 121235 *121235*

D3463-1 Parent Item:

Parent Item Name: Arm

D3463-1

Start Date: 6/18/14

Required Date: 6/18/14

Page 1

Start Qty: 10.00

Required Qty: 10.00

Comments:

IPP REV. A 05.11.17 NEW ISSUE EC

IPP REV:B

ADDED MANUAL LATHE STEP 10-06-02 JLM VER:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Primary Item Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M316TR1.00W.120		Purchased	No		100	f	98.0737	2.083	22			
M/216TD	1 001/1	20						**				

ツバス・カーHー ロロVV コンロ

316 RD tubing 1.00 x .120w

Loc Code Location Loc Qty MAT018 98.073684 98.073684 →M126182

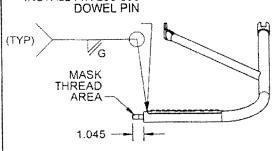
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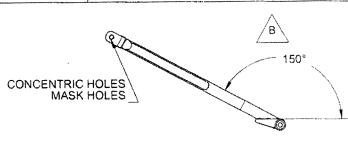
DQA:			Date:											TQAG"	
						WORK ORDER NON	-CC	ONFO	RMANCE / UPE				_	AEROSPACE	
QA Closed:			Date:					7-			ork Order up	date only			
Work Orde	ar.					DISPOSITION				AGAINST D	T DEPARTMENT/PROCESS				
WOIK OIG	٠,٠,٠					Rework			Skid-tube	Crosstube		Water Jet		Engineering	
Part N	No.					Scrap			Machining	Small Fab	Pro	d. Eng. Coor.		Quality	
						Use-as-is		Therr	noforming	Finishing	Rec/Sto	re/Packaging	_	Other	
NCR I	۱o.					Suspected Unapproved			Large Fab	Composite		Supplier		Ш	
Root					Desci	ription of work order update		nitial	Actio	n	Sign &				
Cause		Date	Step	Qty		or non-conformance	Ch	ief Eng	Descrip	tion	Date	Verification	<u> </u>	QC Inspector	
Design															
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Handling/Pre															
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Landi	na (Geor				General	<u> </u>	OLI CA	ILGONI	· · · · · · · · · · · · · · · · · · ·					
Lanui	[]	Bending				Bend		Folio/F	Program		Outside Dim	ensions [Pressure/Forced	
		Centre No	ot Concen	ntric		BOM/Route		Grain	. 08. 4		Over/Under		\dashv	Set-up	
	\vdash	Cracks	or comen			Broken/Damage/Defect		Hardwa	are	-	Part Incorred			Temperature/Cure	
	<u> </u>	Crimp/Kir	nk/Ripple	/Wave		Burrs		4	ion Incomplete/Unqu	ualified	Part Lost/Mi		\neg	Weld	
		Cuffs		,		Contamination	-	1 '	tions Incomplete/Unc	-	Part Moved	Ĭ		Wrong Stock Pulled	
		Crushing				Countersink		4	ned/off center		Positioned V	ے Vrong			
		Heat Trea				Cut Too Short	Г	Mislabe	='		Power Loss/			Other	
		Inspectio		Tube		Drawing	┢	Misrea		_					
	Г	Marks/Ch				Drill Holes		Off-set							
		Turning S				Finish		Out of	Calibration						
			Fit/Function		Out of	Sequence									

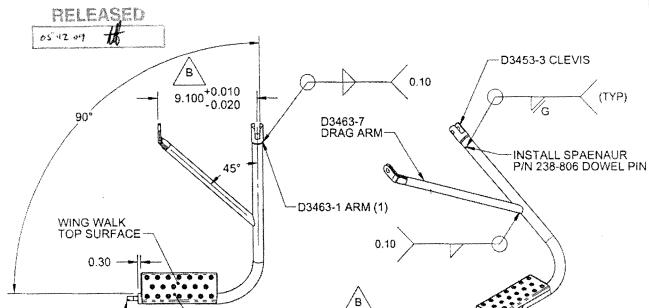


INSTALL P/N 238-806

DESIGN RI		DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA						
CHECK	ED ,//	APPROVED	DRAWING NO.	REV. B					
	AT.	1	D3463	SHEET 1 OF 4					
DATE		<u> </u>	TITLE	SCALE					
	05.1	12.05	STEP WELDMENT	1:8					
 Α	0	5.09.20	NEW ISSUE	W. 40					
В	0	5.12.05	REVISE DIM.; D3463-5 WAS D346	33-5F					







D3463-042 STEP WELDMENT ASSEMBLY D3463-041 OPPOSITE

D3463-3 STEP

NOTES:

D3453-5 PLUG

- 1) WELD PER DART QSI 004 2) FINISH: POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3 BLACK ANTI-SKID PAINT PER DART QSI 005 4.4 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

D3463-5 END CAP

(2 PLACES)

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ENGINEERING

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RETURN TO

WITHOUT NOTICE

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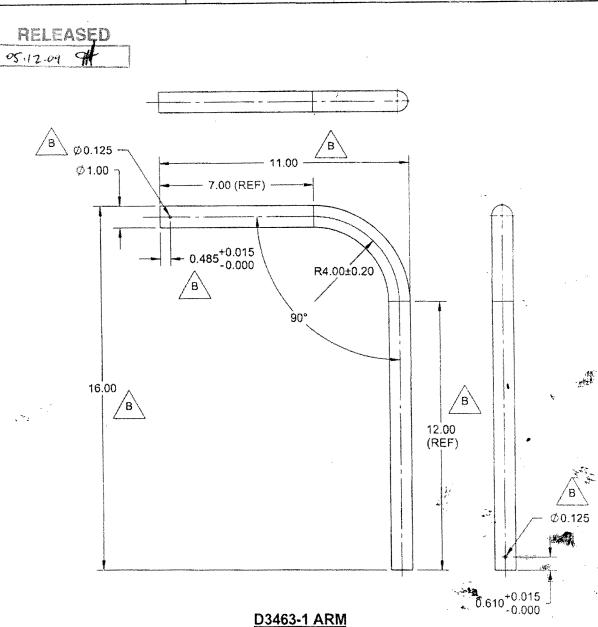
- 4) ALL DIMENSIONS ARE IN INCHES
 5) BREAK ALL UNMARKED SHARP EDGES 0.005 TO 0.010
 6) IDENTIFY WITH DART P/N USING FINE POINT PERMANENT INK MARKER

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DESIGN RF	DRAWN BY RF	DART AEROSPA HAWKESBURY, ONTAR	
CHECKED	APPROVED #	DRAWING NO.	REV. B SHEET 2 OF 4
DATE		TITLE	SCALE
05.	12.05	STEP WELDMENT	1.4



NOTES:

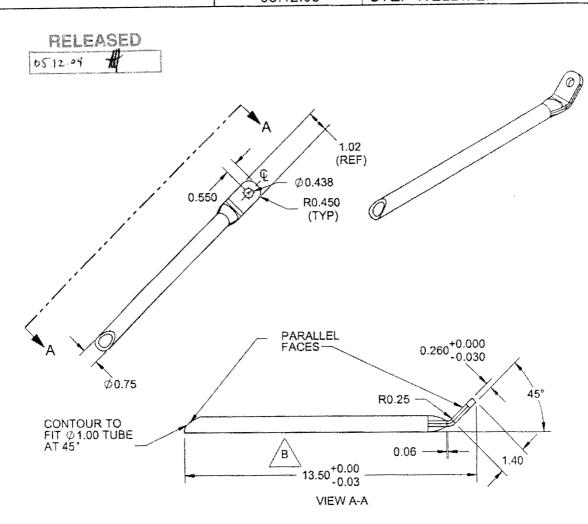
- 1) MATERIAL: AISI 316/304 SS SEAMLESS TUBING (REF. DART SPEC. M304TR1.000W.120) 2) FINISH: NONE 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED 4) ALL DIMENSIONS ARE IN INCHES 5) BREAK ALL UNMARKED SHARP EDGES 0.005 TO 0.025

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DESIGN RF	DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA							
CHECKED	APPROVED #	DRAWING NO. D3463	REV. B SHEET 3 OF 4						
DATE 05	12.05	STEP WELDMENT	SCALE 1:4						



D3463-7 DRAG ARM

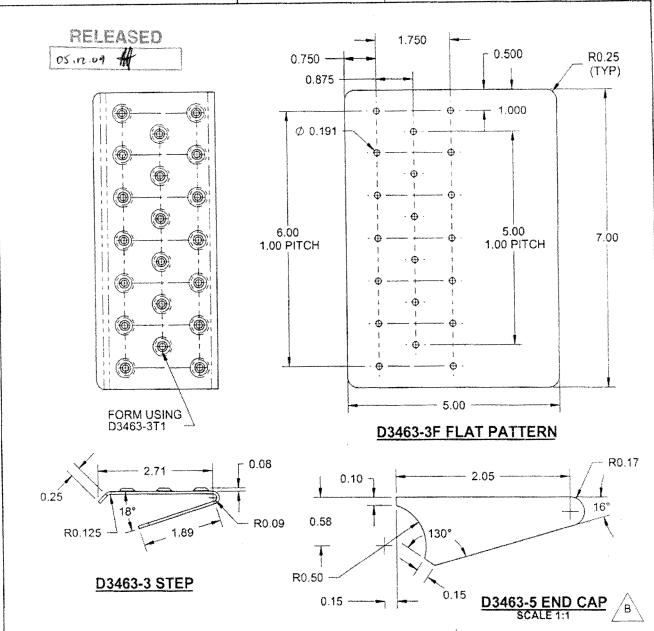
NOTES:

- 1) MATERIAL: AISI 316/304 SS SEAMLESS TUBING (REF. DART SPEC. M304TR0.750W.120) 2) FINISH: NONE 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED 4) ALL DIMENSIONS ARE IN INCHES 5) BREAK ALL UNMARKED SHARP EDGES 0.005 TO 0.010

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DESIGN RF	DRAWN BY RF	DART AEROSPAO HAWKESBURY, ONTARIO	
CHECKED #	APPROVED	DRAWING NO. D3463	REV. B SHEET 4 OF 4
DATE	2.05	TITLE STEP WEI DMENT	SCALE



NOTES:

- 1) MATERIAL: AISI 304/316 SS SHEET, 0.060 THICK (REF. DART SPEC. M304S16GA)
- 2) FINISH: NONE
 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
 4) ALL DIMENSIONS ARE IN INCHES
 5) BREAK ALL UNMARKED SHARP EDGES 0.005 TO 0.010

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DART AEROSPACE LTD	Work Order:	121235
Description: ARM	Part Number:	D3463-1
Inspection Dwg: DB463 Rev: 13		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.125	+ 005 - 007 - 008 - 015 - 005	8.125	/		Ven	11-06
9.125	± 000	.490			//	
-610	+ 6/5	.612			• •	
·						
				·		
L		L				

Measured by:	on	Audited by:	DAS		Preliminary Approval:	
Date:	14/09/10	Date:	9-89	4-9-15	Date:	

ſ	Rev	Date	Change	Revised by	Approved
1	E	10.04.14	Added preliminary approval	KJ	

\$ 10.04.15